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LAHIVE & COCKFIELD, LLP/THE MATHWORKS
FLOOR 30, SUITE 3000
One Post Office Square
Boston, MA 02109-2127

EXAMINER	
OCHOA, JUAN CARLOS	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/678,718	GAGE, STACEY M.	
	Examiner	Art Unit	
	JUAN C. OCHOA	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _01 December 2008_.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1,3-5,7-11,13,15-17 and 19-96_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _1,3-5,7-11,13,15-17,19-37 and 73-79_ is/are allowed.

6)☒ Claim(s) _38-72 and 80-96_ is/are rejected.

7)☒ Claim(s) _82_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1. The amendment filed 12/01/08 has been received and considered. Claims 1, 3–5, 7–11, 13, 15–17, and 19–96 are presented for examination.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/01/08 has been entered.

Claim Interpretation

3. Office personnel are to give claims their "broadest reasonable interpretation" in light of the supporting disclosure. In re Morris, 127 F.3d 1048, 1054–55, 44 USPQ2d 1023, 1027–28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. In re Prater, 415 F.2d 1393, 1404–05, 162 USPQ 541,550–551(CCPA 1969). See *also In re Zletz, 893 F.2d 319,321–22, 13 USPQ2d 1320, 1322(Fed. Cir. 1989) ("During patent examination the pending claims must be interpreted as broadly as their terms reasonably allow").... The reason is simply that during patent prosecution when claims can be amended, ambiguities should be recognized, scope and breadth of language explored, and clarification imposed.... An

essential purpose of patent examination is to fashion claims that are precise, clear, correct, and unambiguous. Only in this way can uncertainties of claim scope be removed, as much as possible, during the administrative process.

4. In the absence of an elaboration of "discrete" in the Application description, the claims reciting "a discrete wind turbulence model" were interpreted according to this dictionary definition (American Heritage® Dictionary of the English Language): *Mathematics* Defined for a finite or countable set of values; not continuous.

5. Claims recite "simple variable mass" and “custom variable mass”. The specification defines "simple variable mass" and “custom variable mass” as “The variable mass includes at least one of simple variable mass in which mass changes via mass rate, and a custom variable mass in which users may specify how the mass changes" (see page 4, lines 8–10). The claims reciting "simple variable mass" and “custom variable mass” were interpreted according to this definition.

6. The Examiner would like to point out that the Examiner, throughout the prosecution of this application, applied art in accordance with the guidance set forth in MPEP § 2131, "The elements must be arranged as required by the claim, but this is not an ipsissimis verbis test, i.e., identity of terminology is not required".

Claim Objections

7. Claim 82 is objected to because of the following informalities:

8. Claim 82, line 2 includes the miss conjugated term “turbulence model”. Examiner interprets as “turbulence models" for examination purposes.

9. Appropriate correction is required.

Claim Rejections – 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

11. Claims 38–41, 54–72, and 80–96 are rejected under 35 U.S.C. 102(a) as being anticipated by AeroSim Blockset User's Guide, (AeroSim hereinafter).

12. As to claim 38, AeroSim discloses a computer implemented system for **designing a target system** (see "AeroSim aeronautical simulation blockset provides a complete set of tools for the rapid **development of** nonlinear 6–degree–of–freedom **aircraft dynamic models**" in page 3, col. 2, last paragraph, lines 1–3) in which a planetary environment is one of the factors for designing the target system, the system comprising: a model storage for storing and providing models necessary to design the target system (see "library" in page 3, col. 2, last paragraph, lines 1–3), wherein the model storage provides a plurality of wind models, wherein the wind models include at least a discrete wind turbulence model (see “discrete” as “3×1 VECTOR”, since AeroSim’s 3×1 vector is not continuous, in "Inputs: VelW = the 3×1 VECTOR of wind–axes velocities" and "Outputs: TurbVel = the 3×1 VECTOR of turbulence velocities" in the same AeroSim page 65); a design unit for designing the target system by utilizing the models provided by the model storage (see page 4, col. 2, last paragraph).

13. As to claim 39, AeroSim discloses a system further comprising an execution unit for executing the target system designed in the design unit (see page 32, 1st and 2nd paragraphs).

14. As to claim 40, AeroSim discloses a system wherein the execution unit is realized through a process of automatic code generation from the design unit (see page 32, 2nd paragraph).

15. As to claim 41, AeroSim discloses a system wherein numerical representations including data type, precision and data vectorization of the models are automatically derived from the context of using the models when executing the models (see page 32, 4th and 5th paragraphs).

16. As to claim 54, AeroSim discloses a system wherein the models provided from the model storage are represented in symbols (see page 4, Fig. 2).

17. As to claim 55, AeroSim discloses a system wherein the symbols include blocks (see page 3, col. 2, last paragraph, lines 1–3).

18. As to claim 56, AeroSim discloses a system wherein the design unit provides a user interface to enter parameters for each block of the target system in response to an action taken by a user (see page 32, 4th paragraph).

19. As to claim 57, AeroSim discloses a system wherein the user interface is provided in response to a user clicking each block of the target system (see page 41, 2nd paragraph).

20. As to claim 58, AeroSim discloses a system wherein the user interface provides an option to select one of the wind turbulence models from the model storage (see page 41, 2nd paragraph and “atmosphere” block in Fig. 31, as well as page 62).

21. As to claim 59, AeroSim discloses a system wherein the wind turbulence models from the model storage are provided in the user interface in response to an action taken by a user (see page 41, 2nd paragraph and “atmosphere” block in Fig. 31).

22. As to claim 60, AeroSim discloses a computer implemented system for **designing a target system** (see "AeroSim aeronautical simulation blockset provides a complete set of tools for the rapid **development of nonlinear 6–degree–of–freedom aircraft dynamic models**" in page 3, col. 2, last paragraph, lines 1–3) in which an aerospace or aeronautic model is one of the elements for designing the target system, the system comprising: a model storage for storing and providing models necessary to design the target system (see "library" in page 3, col. 2, last paragraph, lines 1–3), wherein the model storage provides a plurality of models for equations of motion (see page 4, col. 2, last paragraph), wherein the plurality of models for equations of motion (see “models for equations of motion” as “six-degree-of-freedom aircraft model” in "The AeroSim library includes all of the blocks needed for building a nonlinear six-degree-of-freedom aircraft model. This section provides a detailed description for each block that can be found in the library” in page 41, lines 1–4; “The main library folder, shown in Fig. 31 includes sub-folders for various parts of the aircraft dynamic model. The sub-sections of the Block Reference section correspond to these library subfolders. The AeroSim library contains a total of 103 blocks” lines 8–11; and Fig. 31) include at least

one model for equations of motion with simple variable mass and at least one custom variable mass model where the custom variable mass includes information for identifying the way that a mass of at least a part of the target system changes (see “simple variable mass” as "1. Parameters: Initial mass = the initial value for the fuel flow integrator. Tank structure = a Matlab structure which contains the tank parameters read from the JSBSim configuration file. 2. Inputs: MassFlow = the mass fuel flow out of the tank [use negative input if the fuel flows into the tank]… 3. Outputs: Mass = current mass of the fuel in the tank" in page 177, col. 1 to page 177, col. 2, line 1; page 41, Fig. 31, icon “**FlightGear-compatible**”; “4.14 FlightGear-Compatible. AeroSim’s FlightGear-compatibility layer includes XML parsers that can load aircraft, engine, and thruster parameters into Matlab structures, as well as the necessary aircraft-dynamics blocks that use such Matlab structures. These aircraft dynamics blocks as well as several complete aircraft models can be found in the FlightGear-Compatible library folder and they are presented in detail in this subsection” in page 163; and “**4.14 FlightGear-Compatible . . .** page 163 **4.14.12 Tank: Fuel Tank** . . . page 177” in pages 3–4; and “custom variable mass model” as "1. Parameters: … Fuel flow look–up table = the mass fuel flow data as a NRPM ×NMAP matrix, given in grams per hour” in page 128, col. 1, last 2 lines and “3. Outputs: … Fuelflow = the instantaneous mass fuel flow, in kg/s" in page 128, col. 2, lines 16, 20, and 21; page 41, Fig. 31, icon “**Propulsion**”; “4.10 Propulsion. This library folder includes blocks that model various types of aircraft propulsion systems” in page 126, lines 1–3; and “**4.10 Propulsion** . . .page 126, 4.10.1 Fixed-Pitch Propeller . . . page 127, **4.10.2 Piston Engine** . . . page 128” in page 3).

23. Examiner notes that the Fuel Tank block, in page 177, is a FlightGear-compatible block, as shown in page 163, and that FlightGear-compatible is a library subfolder, as shown in page 41 lines 8–11 and Fig. 31, of AeroSim's six-degree-of-freedom aircraft models, i.e. models for equations of motion.

24. Examiner notes that the Piston Engine block, in page 128, is a propulsion block, as shown in page 126, and that propulsion is a library subfolder, as shown in page 41 lines 8–11 and Fig. 31, of AeroSim's six-degree-of-freedom aircraft models, i.e. models for equations of motion.

25. Examiner notes that in the claim, "simple variable mass" was interpreted as "The variable mass includes at least one of simple variable mass in which mass changes via mass rate", since AeroSim's model incorporates mass fuel flow out of and/or into the tank, i.e. mass rate changes; and that "custom variable mass" was interpreted as "users may specify how the mass changes" (see specification's page 4, lines 8–10).

26. And a design unit for designing a model of the target system by utilizing the models provided by the model storage (see "The **library** also provides complete aircraft models" in page 4, col. 2, last paragraph).

27. As to claim 61, AeroSim discloses a system further comprising an execution unit for executing the target system designed in the design unit (see page 32, 1st and 2nd paragraphs).

28. As to claim 62, AeroSim discloses a system wherein the execution unit is realized through a process of automatic code generation from the design unit (see page 32, 2nd paragraph).

29. As to claim 63, AeroSim discloses a system wherein numerical representations including data type, precision and data vectorization of the models are automatically derived from the context of using the models when executing the models (see page 32, 4th and 5th paragraphs).

30. As to claim 64, AeroSim discloses a system wherein the models for equations of motion include models for one of three–degree–of–freedom equations of motion and six–degree–of–freedom equations of motion (see page 41, lines 1–2).

31. As to claim 65, AeroSim discloses a system wherein the plurality of models for equations of motion implement in multiple axes representations (see "EOM" in page 89, lines 7–9).

32. As to claim 66, AeroSim discloses a system wherein the plurality of models for equations of motion implement in one of body axes (see " body axes" in page 89, lines 7–9) and wind axes (see page 50).

33. As to claim 67, AeroSim discloses a system wherein the models provided from the model storage are represented in symbols (see page 4, Fig. 2).

34. As to claim 68, AeroSim discloses a system wherein the symbols include blocks (see page 3, col. 2, last paragraph, lines 1–3).

35. As to claim 69, AeroSim discloses a system wherein the design unit provides a user interface to enter parameters for each block of the target system in response to an action taken by a user (see page 32, 4th paragraph).

36. As to claim 70, AeroSim discloses a system wherein the user interface is provided in response to a user clicking each block of the target system (see page 41, 2^{nd} paragraph).

37. As to claim 71, AeroSim discloses a system wherein the user interface provides an option to select one of the equations of motion models in the model storage (see page 41, 2^{nd} paragraph and “equations of motion” block in Fig. 31, as well as page 89).

38. As to claim 72, AeroSim discloses a system wherein the equations of motion models in the model storage are provided in the user interface in response to an action taken by a user (see page 41, 2^{nd} paragraph and “equations of motion” block in Fig. 31).

39. As to claim 80, AeroSim discloses a computer–readable medium holding instructions executable in a computer for the **design of a target system** (see "AeroSim aeronautical simulation blockset provides a complete set of tools for the rapid **development of** nonlinear 6–degree–of–freedom **aircraft dynamic models**" in page 3, col. 2, last paragraph, lines 1–3), wherein a planetary environment is one of factors for designing the target system, the instructions comprising: instructions for providing at least one wind turbulence model necessary to design the target system (see page 65); wherein the at least one wind turbulence model includes at least one discrete wind turbulence model (see “discrete” as “3×1 VECTOR”, since AeroSim’s 3×1 vector is not continuous, in "Inputs: VelW = the 3×1 VECTOR of wind–axes velocities" and "Outputs: TurbVel = the 3×1 VECTOR of turbulence velocities" in the same AeroSim page 65); and instructions for incorporating the at least one wind turbulence model to the target system (see page 4, col. 2, last paragraph).

40. As to claim 81, AeroSim discloses a medium further holding instructions for executing behavior of the target system designed (see page 32, 1st and 2nd paragraphs).

41. As to claim 82, AeroSim discloses a medium wherein each of the at least one wind turbulence models are represented by blocks (see page 3, col. 2, last paragraph, lines 1–3).

42. As to claim 83, AeroSim discloses a medium wherein the instructions for incorporating comprises instructions for providing a graphical user interface in response to an action taken by a user (see page 32, 4th paragraph).

43. As to claim 84, AeroSim discloses a medium wherein the graphical user interface is provided in response to a user clicking the block representing a wind turbulence model (see page 41, 2nd paragraph).

44. As to claim 85, AeroSim discloses a medium wherein the graphical user interface provides an option to change a wind turbulence model to another wind turbulence model (see page 41, 2nd paragraph and “atmosphere” block in Fig. 31).

45. As to claim 86, AeroSim discloses a medium wherein the graphical user interface provides blanks to enter parameters of the wind turbulence models to produce outputs of the wind turbulence models (see page 32, 4th paragraph).

46. As to claim 87, AeroSim discloses a computer–readable medium holding instructions executable in a computer for the **design of a target system** (see "AeroSim aeronautical simulation blockset provides a complete set of tools for the rapid **development of** nonlinear 6–degree–of–freedom **aircraft dynamic models**" in page 3,

col. 2, last paragraph, lines 1–3), the instructions for comprising: instructions for providing equations of motion models necessary to design the target system (see page 3, col. 2, last paragraph, lines 3–5) wherein the equations of motion models include at least one of simple variable mass models (see "1. Parameters: Initial mass = the initial value for the fuel flow integrator. Tank structure = a Matlab structure which contains the tank parameters read from the JSBSim configuration file. 2. Inputs: MassFlow = the mass fuel flow out of the tank [use negative input if the fuel flows into the tank]... 3. Outputs: Mass = current mass of the fuel in the tank" in page 177, col. 1 to page 177, col. 2, line 1) and custom variable mass models where the way that mass changes is specified (see "1. Parameters: ... Fuel flow look–up table = the mass fuel flow data as a NRPM ×NMAP matrix, given in grams per hour" in page 128, col. 1, last 2 lines and "3. Outputs: ... Fuelflow = the instantaneous mass fuel flow, in kg/s" in page 128, col. 2, lines 16, 20, and 21); and instructions for incorporating the equations of motion models into the target system (see page 4, col. 2, last paragraph). Examiner notes that in the claim, "simple variable mass" was interpreted as "The variable mass includes at least one of simple variable mass in which mass changes via mass rate", since AeroSim's model incorporates mass fuel flow out of and/or into the tank, i.e. mass rate changes; and that "custom variable mass" was interpreted as "users may specify how the mass changes" (see specification's page 4, lines 8–10).

47. As to claim 88, AeroSim discloses a medium wherein the equations of motion models include at least one of three–degree–of–freedom equations of motion models and six–degree–of–freedom equations of motion models (see page 41, lines 1–2).

48. As to claim 89, AeroSim discloses a medium further holding instructions for executing behavior of the target system designed (see page 32, 1st and 2nd paragraphs).

49. As to claim 90, AeroSim discloses a medium wherein the equations of motion models implemented in multiple axes representations (see "EOM" in page 89, lines 7–9).

50. As to claim 91, AeroSim discloses a medium wherein the equations of motion models implemented in one of body axes (see " body axes" in page 89, lines 7–9) and wind axes (see page 50).

51. As to claim 92, AeroSim discloses a medium wherein the equations of motion models are represented by blocks (see page 3, col. 2, last paragraph, lines 1–3).

52. As to claim 93, AeroSim discloses a medium wherein the instructions for incorporating comprises instructions for providing a graphical user interface in response to an action taken by a user (see page 32, 4th paragraph).

53. As to claim 94, AeroSim discloses a medium wherein the graphical user interface is provided in response to user's clicking the blocks representing the equations of motion models (see page 41, 2nd paragraph).

54. As to claim 95, AeroSim discloses a medium wherein the graphical user interface provides an option to change an equation of motion model to another equations of motion model (see page 41, 2nd paragraph and “atmosphere” block in Fig. 31).

55. As to claim 96, AeroSim discloses a medium wherein the graphical user interface provides blanks to enter parameters of the equations of motion models to produce outputs of the equations of motion models (see page 32, 4th paragraph).

Claim Rejections – 35 USC § 103

56. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

57. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

58. Claims 42–53 are rejected under 35 U.S.C. 103(a) as being unpatentable over AeroSim taken in view of Marc Rauw, (Rauw hereinafter), FDC 1.2 – A Simulink Toolbox for Flight Dynamics and Control Analysis, as applied to claim 38 above.

59. As to claim 42, while AeroSim discloses MIL–STD–8785C (see "Von Karman" in page 65, line 1), AeroSim fails to disclose incorporating a wind turbulence model from one of military specifications MIL–HDBK–1797.

60. Rauw discloses a system wherein the plurality of wind turbulence model includes a model incorporating a wind turbulence model from one of military specifications MIL–HDBK–1797 (see "MIL–HDBK–1797" as "digital Dryden" in page 57, last paragraph to page 58, 1st paragraph) and MIL–STD–8785C (see "Von Karman" in page 65, line 1 and as " Dryden" in page 118, Description, lines 1–2). As per “The specifications MIL–F–8785C and MIL–STD–1797 provide atmospheric turbulence forms including Von Karman form and Dryden form, discrete wind gust form and wind shear form. The specification MIL–STD–1797 additionally provides the digital filter implementation of the Dryden turbulence components” (see application description page 14, last paragraph), Examiner interprets "MIL–F–8785C" as "atmospheric turbulence forms including Von Karman form and Dryden form" and "MIL–HDBK–1797" as "digital filter implementation of the Dryden turbulence components".

61. AeroSim and Rauw are analogous art because they are related to flight dynamics.

62. Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to utilize the steps of Rauw in the method of AeroSim because Rauw develops the Flight Dynamics and Control toolbox FDC based upon Matlab and Simulink, as a graphical software environment for the design and analysis of aircraft dynamics and control systems (see page iii, lines 1–3), and as a result, Rauw reports the following improvements over his prior art, i.e. flight control systems with mechanical linkages: a full authority, fly–by–wire, digital control system, i.e. an Automatic Flight Control System (AFCS), which incorporates design–techniques and

mathematical dynamic models in a user–friendly Computer Assisted Control System Design (CACSD) package (see page 11, lines 3–9).

63. As to claim 43, Rauw discloses a system wherein the plurality of wind turbulence models includes wind turbulence models that are continuous in altitude (see “A major drawback of the Von Karman spectral densities is that they are not rational functions of Ω. For this reason the following power spectral density model is often used for flight simulation, i.e. Dryden spectra" in page 32, 3rd to 2nd paragraphs from the bottom).

64. As to claim 44, Rauw discloses a system wherein the plurality of wind turbulence models includes wind turbulence models at altitudes within multiple transition regions between the multiple regions for wind turbulence models (see "regions" as "steady and non–steady atmospheres" in page 235 to page 237, 1st paragraph).

65. As to claim 45, Rauw discloses a system wherein the plurality of wind turbulence models includes a wind turbulence model at an altitude in a transition region between first and second regions (see "first region" as flight, "transition" as "approach", and "second region" as "landing" in page 235, lines 1–10).

66. As to claim 46, Rauw discloses a system wherein the wind turbulence models in the first and second regions being defined in military specifications (see "military specifications" as "digital Dryden" in page 57, last paragraph to page 58, 1st paragraph, "Von Karman" in page 65, line 1 and as " Dryden" in page 118, Description, lines 1–2). As per “The specifications MIL–F–8785C and MIL–STD–1797 provide atmospheric turbulence forms including Von Karman form and Dryden form, discrete wind gust form and wind shear form. The specification MIL–STD–1797 additionally provides the digital

filter implementation of the Dryden turbulence components” (see application description page 14, last paragraph), Examiner interprets "MIL–F–8785C" as "atmospheric turbulence forms including Von Karman form and Dryden form" and "MIL–HDBK–1797" as "digital filter implementation of the Dryden turbulence components".

67. As to claim 47, Rauw discloses a system wherein the wind turbulence models within a plurality of transition regions generate values of the wind turbulence model by transition methods between the multiple regions for wind turbulence (see page 236, 3rd paragraph from the bottom, lines 2–7).

68. As to claim 48, Rauw discloses a system wherein the transition method of the wind turbulence model within a single transition region may contain a plurality of transition methods (see page 236, 3rd paragraph from the bottom, lines 2–7).

69. As to claim 49, Rauw discloses a system wherein the plurality of transition methods may overlap (see page 236, 3rd paragraph from the bottom, lines 2–7).

70. As to claim 50, AeroSim discloses a system wherein the wind turbulence model in the transition region generates values of the wind turbulence model by linearly interpolating between values of wind turbulence models between the plurality of transition regions (see page 63, col. 1, last paragraph).

71. As to claim 51, Rauw discloses a system wherein the wind turbulence model transforms coordinates of the wind turbulence model in a plurality of regions to a common coordinate system (see page 233, Section B2.2).

72. As to claim 52, Rauw discloses a system wherein the common coordinate system is the coordinates of the wind turbulence model in one of the plurality of regions (see page 237, Section B.5).

73. As to claim 53, Rauw discloses a system wherein the wind turbulence model transforms coordinates of the wind turbulence model in the first region to coordinates of the wind turbulence model in the second region (see page 237, Section B.5).

74. Examiner would like to point out that any reference to specific figures, columns and lines should not be considered limiting in any way, the entire reference is considered to provide disclosure relating to the claimed invention.

Allowable Subject Matter

75. Claims 1, 3–5, 7–11, 13, 15–17, 19–37 and 73–79 are allowed.

76. The following is a statement of reasons for the indication of allowable subject matter:

77. While AeroSim discloses presenting a user interface in response to an action taken by a user (see “double–click the block to open the block parameters dialog” in page 32, 4th paragraph and user interface/dialog box in Fig. 2) and a computer–implemented method for modeling a target system (see "AeroSim aeronautical simulation blockset provides a complete set of tools for the rapid development of nonlinear 6–degree–of–freedom aircraft dynamic models" in page 3, col. 2, last paragraph, lines 1–3),

Rauw discloses displaying a user interface in response to a user action, where the user action includes selecting the first block (see “double–clicking an INCOLOAD button within a graphical Simulink system from FDC 1.2, after which a user menu will be displayed, see figure 9.2" in page 143, last 2 lines and page 144, figure 9.2), and receiving a user selection that selects a first component model from the multiple component models (see “the designer should be able to manipulate all elements of a specific control system, as well as the mathematical models involved in a specific design task, by means of a graphical user–interface" in page 15, lines 3–5),

and Hiranaka discloses component models belonging to a category of atmosphere models that include at least a standard day atmosphere model (see pages 64-66 and “The block takes in as parameters the sea level temperature and pressure. This allows the user to set up nonstandard conditions to match flight test data that has not been normalized“ in page 65, 1st paragraph),

none of these references taken either alone or in combination disclose specifically including:

claim 1, "switching the first block to represent a second component model in response to a user action indicating a selection of the second component model in the user interface, without replacing the first block with a second block representing the second component model",

which the Examiner interprets as "The user interface of the present invention enables users to change a currently incorporated equations of motion model to another equations of motion model without removing the current equations of motion model and

then adding another equations of motion model" (see description of the instant application page 4, 2nd paragraph) and argued as 'The alleged admission on pages 20-21 of the Specification must be read in the context of the Specification as a whole (MPEP §2141.02). The Specification notes that "in the conventional systems, it is required to replace an atmosphere model to change between atmosphere models, to replace a wind turbulence model to change between wind turbulence model, and to replace equations of motion model to change between equations of motion models" (Specification at page 3). In contrast to the conventional systems, the "user interface of the present invention enables users to change a currently incorporated atmosphere model to another atmosphere model <u>without removing the current atmosphere model and then adding another model</u>" (Specification at page 3, emphasis added)' (see Applicant's arguments filed 12/01/08 page 23, 3rd paragraph),

claim 13, "switching the first block to represent a second component model in response to a user action indicating a selection of the second component model in the user interface; and incorporating the second component model into the model of the target system by one of copying or referring to the second component model in the block, conditionally evaluating at least a part of the component model, or executing a sequence of modifications to the component model",

which the Examiner interprets as "The user interface of the present invention enables users to change a currently incorporated equations of motion model to another equations of motion model without removing the current equations of motion model and then adding another equations of motion model" (see description of the instant

application page 4, 2nd paragraph) and argued as ‘As discussed above in relation to claim 1, the AAPA does not discuss switching the first block to represent a second component in response to a user action indicating a selection of the second component model in the user interface. The AAPA discusses including the functionality of a component model in a block, but does not discuss switching the first block to represent a second component model. Further, the AAPA does not disclose or suggest that such a switch may be performed in response to a user action indicating a selection of the second component model in the user interface. The alleged admission does not discuss any ways in which a "switch" might be effected’ (see Applicant's arguments filed 12/01/08 page 26, 4th and 5th paragraphs),

claim 25, "wherein the model storage includes at least two different day atmosphere models, wherein at least one of the two different day atmosphere models is a non-standard day atmosphere model",

which the Examiner interprets argued as "In contrast, a non-standard atmosphere model defines non-standard values for temperature, pressure, air density, or the speed of sound that vary from the standard temperature, pressure, air density, and speed of sound. For example, a non-standard atmosphere model might be used to calculate an airplane's required takeoff length on a hot day, as opposed to a day having a standard temperature. Hiranaka uses only a standard model. Merely varying the input altitude, as suggested by the Examiner, does not result in the use of a non-standard atmosphere model. Larger-than- normal input values for altitude can be supplied to a standard atmosphere model or a non\- standard atmosphere model, but this does not change the

underlying type of atmosphere model that is used" (see Applicant's arguments filed 12/01/08 page 30, 4th and 5th paragraphs),

and claim 73, "the atmosphere models including at least one atmosphere model that represents a non-standard day atmosphere",

which the Examiner interprets argued as "In contrast, a non-standard atmosphere model defines non-standard values for temperature, pressure, air density, or the speed of sound that vary from the standard temperature, pressure, air density, and speed of sound. For example, a non-standard atmosphere model might be used to calculate an airplane's required takeoff length on a hot day, as opposed to a day having a standard temperature. Hiranaka uses only a standard model. Merely varying the input altitude, as suggested by the Examiner, does not result in the use of a non-standard atmosphere model. Larger-than- normal input values for altitude can be supplied to a standard atmosphere model or a non\- standard atmosphere model, but this does not change the underlying type of atmosphere model that is used" (see Applicant's arguments filed 12/01/08 page 30, 4th and 5th paragraphs),

in combination with and in the same relationship with the remaining elements and features of the claimed invention. Also, there is no motivation to combine neither the nor the reference with to meet these limitations. It is for these reasons that applicant's invention defines over the prior art of record.

78. As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

Response to Arguments

79. Applicant's arguments filed 12/01/08 have been fully considered but they are not persuasive.

80. Regarding the claim objections, the amendment corrected all deficiencies and the objections are withdrawn.

81. Regarding the rejections under 112, the amendment corrected all deficiencies and the rejections are withdrawn.

82. Regarding the rejections under 102 and 103. Applicant's arguments have been considered, but some of them are not persuasive.

83. As to claims 1, 3–5, 7–11, 13, 15–37 and 73–79, Applicant's arguments have been considered and the rejections are withdrawn.

84. As to claim 38, Applicant argues, (see page 15, 5^{th} paragraph to page 17, 3^{rd} paragraph), that AeroSim is silent about a discrete wind turbulence model.

85. Applicant argues, (see page 16, 4^{th} paragraph), "The words of a claim must be given their plain meaning unless such meaning is inconsistent with the specification (MPEP §2111.01(I)). It is the use of the words in the context of the written description and customarily by those skilled in the relevant art that accurately reflects both the

"ordinary" and the "customary" meaning of the terms in the claims (Ferguson Beauregard/Logic Controls v. Mega Systems, 350 F.3d 1327, 1338, 69 USPQ2d 1001, 1009 (Fed. Cir. 2003))".

86. MPEP §2111.01(I) reads: "Ferguson Beauregard /Logic Controls v. Mega Systems, 350 F.3d 1327, 1338, 69 USPQ2d 1001, 1009 (Fed. Cir. 2003) (**Dictionary definitions were used to determine the ordinary and customary meaning of the words** "normal" and "predetermine" to those skilled in the art. **In construing claim terms, the general meanings gleaned from reference sources, such as dictionaries, must always be compared against the use of the terms in context, and the intrinsic record must always be consulted to identify which of the different possible dictionary meanings is most consistent with the use of the words by the inventor**)".

87. For a plain meaning of "discrete" see Claim Interpretation above. **In the absence of an elaboration of "discrete" in the Application description, the claims reciting "a discrete wind turbulence model" were interpreted according to this dictionary definition.**

88. Applicant argues, (see page 16, 5th paragraph), 'As noted in the Specification of the present Application at page 16, a "discrete wind turbulence model" is defined by the U.S. Military Handbook MIL-HDBK-1797, 19 December 1997, and by U.S. Military Specification MIL-F-8785C, 5 November 1980 (Response at page 15-16)'.

89. First of all, the Specification of the present Application page 16 is devoid of such definition. Examiner notes that the above argument seems to contradict page 15, 1st

paragraph, which reads: “One of skill in the art will appreciate that the **wind turbulence models are not limited to the military specifications MIL-F-8785C and MIL-STD-1797, and rather includes any** continuous and **discrete wind turbulence models**”.

90. Second, MPEP §2111.01(II) reads: “IT IS IMPROPER TO IMPORT CLAIM LIMITATIONS FROM THE SPECIFICATION”. The Examiner reiterates that the Examiner does not read into the claims neither limitations contained in the specification nor argued limitations. The Examiner’s position applies to express limitations and especially to implied limitations. Although a claim should be interpreted in light of the specification disclosure, it is generally considered improper to read limitations contained in the specification into the claims. See In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 Fed. Cir. 1993, In re Prater, 415 F.2d 1393, 162 USPQ 541 (CCPA 1969), and In re Winkhaus, 527 F.2d 637, 188 USPQ 129 (CCPA 1975), which discuss the premise that one cannot rely on the specification to impart limitations to the claim that are not recited in the claim.

91. Third, in the alternative, if (as argued) ‘a "discrete wind turbulence model" is defined by … MIL-HDBK-1797 … and by … MIL-F-8785C’; why is dependent claim 42 expressly claiming MIL-HDBK-1797 and MIL-F-8785C?

92. As to claim 60, Applicant argues, (see page 18), that AeroSim is silent about at least one model for equations of motion with simple variable mass and at least one custom variable mass model.

93. Applicant argues, (see page 60, 3rd and 4th paragraphs), “The Examiner argues at length that the Fuel Tank Model is a model having a custom variable mass (Advisory Action at page 2). Applicant believes that the Examiner misconstrues the Applicant' s argument. Even if the cited Fuel Tank Model is a model having a custom variable mass, it is not a model for an equation of motion, as recited in claim 60. Instead, it is a model for an equation of mass. An equation of mass is different than an equation of motion. Equations of motion are equations that describe the motion of a system as a function of time. For example, equations of motion describe a system' s velocity, acceleration, or position as a function of time. In contrast, the cited Fuel Tank Model of AeroSim describes the mass and moment of inertia of the fuel tank as a function of time. An object's mass over time does not describe its motion over time, but rather an object's resistance to force. Further, an object's moment of inertia over time does not describe an object's motion over time, but rather describes an object's resistance to torque”.

94. Examiner notes that the cited AeroSim’s Fuel Tank Model in page 177, is a FlightGear-compatible block, as shown in page 163, and that FlightGear-compatible is a library subfolder, as shown in page 41 lines 8–11 and Fig. 31, of AeroSim’s six-degree-of-freedom aircraft models, i.e. models for equations of motion.

95. Examiner also notes that the cited AeroSim’s Piston Engine block, in page 128, is a propulsion block, as shown in page 126, and that propulsion is a library subfolder, as shown in page 41 lines 8–11 and Fig. 31, of AeroSim’s six-degree-of-freedom aircraft models, i.e. models for equations of motion.

96. Examiner also notes that AeroSim's six-degree-of-freedom aircraft models, i.e. models for equations of motion, disclosures have been pointed out by the Examiner in ALL previous rejections (see rejections of at least claims 60 and 64).

97. Examiner has elaborated more AeroSim's disclosures of six-degree-of-freedom aircraft models, i.e. models for equations of motion, in the instant rejection.

98. Regarding the arguments about rejection of claim 80 (see page 19, 2nd–3rd paragraphs) and claims 42–53 (see page 20, last paragraph and page 21, 1st–2nd paragraphs), see Examiner counter–arguments about claim 38 as pointed out above.

99. Regarding the arguments about rejection of claim 87 (see page 20, 1st–2nd paragraphs), see Examiner counter–arguments about claim 60 as pointed out above.

100. Therefore as to claims 38-72 and 80-96, it is the Examiner's position that the cited references anticipate the claims and the rejections are maintained.

Conclusion

101. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan C. Ochoa whose telephone number is (571) 272–2625. The examiner can normally be reached on 7:30AM – 4:00 PM.

102. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on (571) 272–3753. The fax phone number for the organization where this application or proceeding is assigned is 571–273–8300.

103. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair–direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866–217–9197 (toll–free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800–786–9199 (IN USA OR CANADA) or 571–272–1000.

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/J. C. O./ 12/10/08

Examiner, Art Unit 2123

/Paul L Rodriguez/

Supervisory Patent Examiner, Art Unit 2123